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ADA: Red Wine Ingredient May Benefit Prediabetes

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MedPage Today Action Points

- Explain that a very small and preliminary trial of 10 patients found that resveratrol may lower post-meal blood sugar and improve insulin resistance.
- Note that this study was published as an abstract and presented at a conference. These data and conclusions should be considered to be preliminary until published in a peer-reviewed journal.

Review

ORLANDO -- Resveratrol, the compound in red wine potentially responsible for its beneficial cardiovascular effects, may also benefit patients with prediabetes, researchers say.

In a very small and preliminary study, older patients with impaired fasting glucose taking a resveratrol supplement appeared to have improvements in postprandial glucose and insulin resistance, according to Jill P. Crandall, MD, of Albert Einstein College of Medicine in Bronx, N.Y., and colleagues.

They reported their findings during a poster session at the American Diabetes Association meeting here.

"There have been a lot of reports of its benefits in a number of disease states," which is why researchers decided to investigate resveratrol in prediabetes, Crandall told *MedPage Today*.

But she cautioned that "this is just the beginning. The findings need to be confirmed in bigger studies."

Previously, resveratrol has shown beneficial effects on insulin secretion, insulin sensitivity, and glucose tolerance, but only in animal models. Its antioxidant and cardioprotective effects in humans are more well known.

However, trials of resveratrol by companies such as Pfizer and GlaxoSmithKline,

which have focused on the supplement's anti-aging abilities, have not had promising results.

"It is a small study and needs to be confirmed, as other studies with this drug have been negative," Vivian Fonseca, MD, of Tulane University, told *MedPage Today*.

For their study, the researchers recruited 10 patients ages 60 to 80 who had impaired glucose tolerance.

Over four weeks, patients took one of three doses of resveratrol (1g, 1.5g, or 2g) with a standard meal that included 110 grams of carbohydrates, 20 grams of protein, and 20 grams of fat.

Main outcomes included glucose and insulin area under the curve, as well as calculated measures of insulin sensitivity and secretion. These parameters were assessed at mealtime and 30, 60, 120, and 180 minutes later.

Endothelial function was also assessed before and 90 minutes after eating.

The researchers said the results didn't vary by dose, so they combined the data for the analysis.

Crandall also noted that her group had independent tests of the composition of the tablets to confirm that they delivered the indicated dose of resveratrol.

She and colleagues found that after four weeks of resveratrol supplements, fasting plasma glucose was unchanged, but both peak post-meal glucose and three-hour glucose area under the curve declined (185 mg/dL versus 166 mg/dL, and 469 versus 428, respectively, $P=0.001$).

Measures of insulin sensitivity improved ($P=0.03$), although insulin secretion was unchanged, which indicates that the major effect was on insulin resistance, Crandall said.

There was also a trend toward improved post-meal endothelial function, but blood, lipids, and body weight remained unchanged.

Crandall concluded that the preliminary study shows resveratrol improves insulin resistance and post-meal blood glucose, especially in older patients with impaired glucose tolerance, but the findings need to be confirmed in larger analyses.

The study drug was provided by Biotivia.

The researchers reported no conflicts of interest.

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Crandall JP, et al "Resveratrol improves glucose metabolism in older adults with IGT"
ADA 2010; Abstract 736-P.

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